BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XE234

Taking of Marine Mammals Incidental to Specified Activities; Coupeville Timber Towers Preservation Project

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments and information.

SUMMARY: NMFS has received a request from the Washington State Department of Transportation (WSDOT) for an authorization to take small numbers of 10 species of marine mammals, by Level B harassment, incidental to proposed construction activities for the Coupeville Timber Tower Preservation Project in Washington State. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an authorization to WDOT to incidentally take, by harassment, small numbers of marine mammals for a period of 1 year.

DATES: Comments and information must be received no later than [*INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER*].

ADDRESSES: Comments on the application should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. The mailbox address for providing email comments is *itp.guan@noaa.gov*. NMFS is not responsible for e-mail

comments sent to addresses other than the one provided here. Comments sent via e-mail, including all attachments, must not exceed a 25-megabyte file size.

Instructions: All comments received are a part of the public record and will generally be posted to *http://www.nmfs.noaa.gov/pr/permits/incidental.htm* without change. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

A copy of the application may be obtained by writing to the address specified above or visiting the internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm*. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Shane Guan, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq*.) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact

on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for a one-year authorization to incidentally take small numbers of marine mammals by harassment, provided that there is no potential for serious injury or mortality to result from the activity. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization.

Summary of Request

On June 9, 2015, WSDOT submitted a request to NOAA requesting an IHA for the possible harassment of small numbers of marine mammal species incidental to construction associated with the Coupeville Timber Towers Preservation Project at the Coupeville Ferry Terminal in Washington State, between July 15, 2016, and July 14, 2017. On September 22, WSDOT submitted a revised IHA application which incorporated rigorous monitoring and mitigation measures that would prevent the take of humpback whales and the Southern Resident killer whales, which are listed under the Endangered Species Act (ESA). The revised IHA application requests the take of small numbers of 10 marine mammal species incidental to the Coupeville Timber Towers Preservation Project. NMFS determined that the IHA application

was complete on October 1, 2015. NMFS is proposing to authorize the Level B harassment of the following marine mammal species/stocks: harbor seal, California sea lion, Steller sea lion (eastern Distinct Population Segment, or DPS), northern elephant seal, killer whale (West Coast transient stock), gray whale, minke whale, harbor porpoise, Dall's porpoise, and Pacific white-sided dolphin.

Description of the Specified Activity

Overview

WSDOT proposes to conduct Coupeville Timber Towers Preservation Project at the Washington Coupeville Ferry Terminal on Whidbey Island, Washington (Figure 1-2 of the IHA application), to upgrade the existing transfer span towers at the Coupeville Ferry Terminal.

Eight 24-inch diameter hollow steel piles would be installed to support the towers, and concrete caps will be installed on top of the towers in order to support the headframe that houses the pulleys for the transfer span cables. Five to seven 12-inch timber piles would be removed to allow room for the new steel piles to be installed. The remaining tower timber piles would remain in place to help support the structure. Up to 6 temporary 24-inch diameter hollow steel piles would be installed to support the transfer span and towers cable systems during construction. All pile installation would be using impact pile driving.

Temporary steel piles would be removed with a vibratory hammer. Timber piles would be removed with a vibratory hammer or by direct pull using a chain wrapped around the pile. Although timber piles may be removed by means unlikely to result in harassment of marine mammals, we assume for purposes of this analysis that all timber piles would be removed with a vibratory hammer. The crane operator would take measures to reduce turbidity, such as vibrating the pile slightly to break the bond between the pile and surrounding soil, and removing the pile

slowly; or if using direct pull, keep the rate at which piles are removed low enough to meet regulatory turbidity limit requirements. If piles are so deteriorated they cannot be removed using either the vibratory or direct pull method, the operator would use a clamshell to pull the piles from below the mudline. All work would occur in water depths between -10 and -20 feet mean lower-low water.

Dates and Duration

The number of days it would take to complete the project depends on the difficulty in removing and installing piles. Only one hammer (either vibratory or impact) will be in operation at a time. Durations are conservative, and the actual amount of time to remove and install will likely be less. Duration estimates are:

Vibratory removal of timber piles would take approximately 30 minutes per pile, with 5-7 piles removed over two days.

Impact driving of each temporary 24-inch steel pile would take approximately 15 minutes, (approximately 700 strikes per pile), with up to 6 piles installed over 2 days. Temporary piles do not need to be impacted as deep as permanent piles, therefore the duration is shorter.

Impact driving of each permanent 24-inch steel pile would take approximately 30 minutes, (approximately 1,400 strikes per pile), with 8 piles installed over 2 days.
Vibratory removal of each temporary 24-inch steel pile would take approximately 30 minutes, with up to 6 piles removed over 2 days.

A summary of the pile to be removed and installed is provided in Table 1.

Table 1 Summary of piles to be removed and driven for the Coupeville Timber Towers Preservation Project

Size	Install or Remove/ Pile Type	Number of Piles	Hammer Noise Type	Duration (Minutes per Pile)	Duration (Hours)	Duration (Days)
12-inch	Remove timber (existing)	5-7	Vibratory	30	3.5	2

24-inch	Install steel (temporary)	6	Impact	15	1.5	2
24-inch	Install steel (permanent)	8	Impact	30	4	2
24-inch	Remove steel (temporary)	6	Vibratory	30	3	2
Totals		5-7 existing removed 6 temporary installed/removed 8 permanent installed			12	8

Specified Geographic Region

The proposed Coupeville Timber Towers Preservation Project would be conducted at the Coupeville Ferry Terminal, located on Whidbey Island, Island County, Washington (Figure 1-2 of the IHA application). See WSDOT's application for further information regarding the specified geographic region.

Detailed Description of Coupeville Timber Towers Preservation Project

The following construction sequence is anticipated:

- Remove timber piles
- Install temporary steel piles
- Install permanent steel piles
- Install concrete caps
- Transfer headframe to new pile caps
- Remove temporary piles

Detailed descriptions of these activities are provided below.

(1) Vibratory Hammer Removal

Vibratory hammer extraction is a common method for removing timber and steel piling. A vibratory hammer is suspended by cable from a crane and derrick, and positioned on the top of

a pile. The pile is then unseated from the sediments by engaging the hammer, creating a vibration that loosens the sediments binding the pile, and then slowly lifting up on the hammer with the aid of the crane.

Once unseated, the crane continues to raise the hammer and pulls the pile from the sediment. When the pile is released from the sediment, the vibratory hammer is disengaged and the pile is pulled from the water and placed on a barge for transfer upland. Figure 1-4 shows a timber pile being removed with a vibratory hammer.

(2) Direct Pull and Clamshell Removal

Older timber pilings are prone to breaking at the mudline because of damage from marine borers and vessel impacts. In some cases, removal with a vibratory hammer is not possible if the pile is too fragile to withstand the hammer force. Broken or damaged piles may be removed by wrapping the piles with a cable and pulling them directly from the sediment with a crane.

If the piles break below the waterline, the pile stubs will be removed with a clamshell bucket, a hinged steel apparatus that operates like a set of steel jaws. The bucket will be lowered from a crane and the jaws will grasp the pile stub as the crane pulled up. The broken piling and stubs will be loaded onto the barge for off-site disposal. Clamshell removal will be used only if necessary, as it will produce temporary, localized turbidity impacts. Turbidity will be kept within required regulatory limits. Direct pull and clamshell removal do not produce noise that could impact marine mammals. Direct pull and clamshell removal of piles are not expected to affect marine mammals.

(3) Impact Hammer Installation

Impact hammers can be used to install plastic/steel core, wood, concrete, or steel piles. An impact hammer is a steel device that works like a piston. Impact hammers are usually large,

though small impact hammers are used to install small diameter plastic/steel core piles. Impact hammers have guides (called a lead) that hold the hammer in alignment with the pile while a heavy piston moves up and down, striking the top of the pile, and drives it into the substrate from the downward force of the hammer on the top of the pile.

To drive the pile, the pile is first moved into position and set in the proper location using a choker cable or vibratory hammer. Once the pile is set in place, pile installation with an impact hammer can take less than 15 minutes under good conditions, to over an hour under poor conditions (such as glacial till and bedrock, or exceptionally loose material in which the pile repeatedly moves out of position).

Description of Marine Mammals in the Area of the Specified Activity

The marine mammal species under NMFS jurisdiction most likely to occur in the proposed construction area include Pacific harbor seal (*Phoca vitulina richardsi*), northern elephant seal (*Mirounga angustirostris*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias jubatus*), killer whale (*Orcinus orca*) (transient and Southern Resident stocks), Eastern North Pacific gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera novaeangliae*), minke whale (*Balaenoptera acutorostrata*), harbor porpoise (*Phocoena phocoena*), Dall's porpoise (*P. dalli*), and Pacific white-sided dolphin (*Lagenorhynchus obliquidens*). The Western North Pacific gray whale has been observed off the Northwest Pacific, however, the occurrence of this gray whale population in the vicinity of the project area is very unlikely.

Table 2. Marine Mammal Species Potentially Present in Region of Activity

Species	ESA Status	MMPA Status	Occurrence
Harbor Seal	Not listed	Non-depleted	Frequent
California Sea Lion	Not listed	Non-depleted	Frequent
Northern Elephant Seal	Not listed	Non-depleted	Occasional
Steller Sea Lion (eastern	Not listed	Under review	Rare

DPS)			
Harbor Porpoise	Not listed	Non-depleted	Frequent
Dall's Porpoise	Not listed	Non-depleted	Occasional
Pacific White-sided dolphin	Not listed	Non-depleted	Occasional
Killer Whale	Endangered (Southern Resident)	Depleted	Occasional
Killer whale	Not listed (transient)	Non-depleted	Occasional
Gray Whale	Delisted (Eastern North Pacific)	Unclassified	Occasional
Humpback Whale	Endangered	Depleted	Rare
Minke Whale	Not listed	Non-depleted	Rare

General information on the marine mammal species found in Washington coastal waters can be found in Caretta *et al.* (2015), which is available at the following URL: *http://www.nmfs.noaa.gov/pr/sars/pdf/pacific_sars_2014_final_noaa_swfsc_tm_549.pdf*. Refer to that document for information on these species. A list of marine mammals in the vicinity of the action and their status are provided in Table 2. Specific information concerning these species in the vicinity of the proposed action area is provided in detail in the WSDOT's IHA application. Currently, NMFS is conducting a review of the discrete population segments (DPS) of humpback whales for potential delisting, and the Northeast Pacific humpback whale could be delisted from the ESA list if the review determines that this population has recovered significantly.

Potential Effects of the Specified Activity on Marine Mammals

This section includes a summary and discussion of the ways that the types of stressors associated with the specified activity (e.g., pile removal and pile driving) may impact marine mammals. The "**Estimated Take by Incidental Harassment**" section later in this document will include a quantitative analysis of the number of individuals that are expected to be taken by this activity. The "**Negligible Impact Analysis**" section will include the analysis of how this specific activity will impact marine mammals and will consider the content of this section, the "Estimated Take by Incidental Harassment" section, the "**Proposed Mitigation**" section, and the "**Anticipated**

Effects on Marine Mammal Habitat" section to draw conclusions regarding the likely impacts of this activity on the reproductive success or survivorship of individuals and from that on the affected marine mammal populations or stocks.

When considering the influence of various kinds of sound on the marine environment, it is necessary to understand that different kinds of marine life are sensitive to different frequencies of sound. Based on available behavioral data, audiograms have been derived using auditory evoked potentials, anatomical modeling, and other data, Southall *et al.* (2007) designate "functional hearing groups" for marine mammals and estimate the lower and upper frequencies of functional hearing of the groups. The functional groups and the associated frequencies are indicated below (though animals are less sensitive to sounds at the outer edge of their functional range and most sensitive to sounds of frequencies within a smaller range somewhere in the middle of their functional hearing range):

- Low frequency cetaceans (13 species of mysticetes): functional hearing is estimated to occur between approximately 7 Hz and 25 kHz;
- Mid-frequency cetaceans (32 species of dolphins, six species of larger toothed whales, and 19 species of beaked and bottlenose whales): functional hearing is estimated to occur between approximately 150 Hz and 160 kHz;
- High frequency cetaceans (eight species of true porpoises, six species of river dolphins, Kogia, the franciscana, and four species of cephalorhynchids): functional hearing is estimated to occur between approximately 200 Hz and 180 kHz; and
- Pinnipeds in Water: functional hearing is estimated to occur between approximately 75 Hz and 75 kHz, with the greatest sensitivity between approximately 700 Hz and 20 kHz.

As mentioned previously in this document, 11 marine mammal species (7 cetacean and 4 pinniped species) are likely to occur in the proposed seismic survey area. Of the 7 cetacean species likely to occur in the proposed project area, 3 are classified as low-frequency cetaceans (i.e., humpback, gray, and minke whales), 2 are classified as mid-frequency cetaceans (i.e., killer whale and Pacific white-sided dolphin), and 2 are classified as high-frequency cetaceans (i.e., harbor and Dall's porpoises) (Southall *et al.*, 2007). A species' functional hearing group is a consideration when we analyze the effects of exposure to sound on marine mammals.

Marine mammals exposed to high-intensity sound repeatedly or for prolonged periods can experience hearing threshold shift (TS), which is the loss of hearing sensitivity at certain frequency ranges (Kastak *et al.* 1999; Schlundt *et al.* 2000; Finneran *et al.* 2002; 2005). TS can be permanent (PTS), in which case the loss of hearing sensitivity is unrecoverable, or temporary (TTS), in which case the animal's hearing threshold will recover over time (Southall *et al.* 2007). Since marine mammals depend on acoustic cues for vital biological functions, such as orientation, communication, finding prey, and avoiding predators, hearing impairment could result in the reduced ability of marine mammals to detect or interpret important sounds. Repeated noise exposure that causes TTS could lead to PTS.

Experiments on a bottlenose dolphin (*Tursiops truncates*) and beluga whale (*Delphinapterus leucas*) showed that exposure to a single watergun impulse at a received level of 207 kPa (or 30 psi) peak-to-peak (p-p), which is equivalent to 228 dB (p-p) re 1 µPa, resulted in a 7 and 6 dB TTS in the beluga whale at 0.4 and 30 kHz, respectively. Thresholds returned to within 2 dB of the pre-exposure level within 4 minutes of the exposure (Finneran *et al.* 2002). No TTS was observed in the bottlenose dolphin. Although the source level of one hammer strike for pile driving is expected to be much lower than the single watergun impulse cited here, animals being exposed for a

prolonged period to repeated hammer strikes could receive more noise exposure in terms of sound exposure level (SEL) than from the single watergun impulse (estimated at 188 dB re 1 μPa^2-s) in the aforementioned experiment (Finneran *et al*. 2002).

Chronic exposure to excessive, though not high-intensity, noise could cause masking at particular frequencies for marine mammals that utilize sound for vital biological functions (Clark *et al*. 2009). Masking is the obscuring of sounds of interest by other sounds, often at similar frequencies. Masking generally occurs when sounds in the environment are louder than, and of a similar frequency as, auditory signals an animal is trying to receive. Masking can interfere with detection of acoustic signals, such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired.

Masking occurs at the frequency band which the animals utilize. Since noise generated from in-water vibratory pile removal and driving is mostly concentrated at low frequency ranges, it may have little effect on high-frequency echolocation sounds by odontocetes (toothed whales), which may hunt California sea lion and harbor seal. However, the lower frequency man-made noises are more likely to affect the detection of communication calls and other potentially important natural sounds, such as surf and prey noise. The noises may also affect communication signals when those signals occur near the noise band, and thus reduce the communication space of animals (e.g., Clark *et al*. 2009) and cause increased stress levels (e.g., Foote *et al*. 2004; Holt *et al*. 2009).

Unlike TS, masking can potentially impact the species at community, population, or even ecosystem levels, as well as individual levels. Masking affects both senders and receivers of the signals and could have long-term chronic effects on marine mammal species and populations. Recent science suggests that low frequency ambient sound levels in the world's oceans have

increased by as much as 20 dB (more than 3 times, in terms of SPL) from pre-industrial periods, and most of these increases are from distant shipping (Hildebrand 2009). All anthropogenic noise sources, such as those from vessel traffic and pile removal and driving, contribute to the elevated ambient noise levels, thus intensifying masking.

Finally, in addition to TS and masking, exposure of marine mammals to certain sounds could lead to behavioral disturbance (Richardson *et al*. 1995), such as: changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities, such as socializing or feeding; visible startle response or aggressive behavior, such as tail/fluke slapping or jaw clapping; avoidance of areas where noise sources are located; and/or flight responses (e.g., pinnipeds flushing into water from haulouts or rookeries). The onset of behavioral disturbance from anthropogenic noise depends on both external factors (characteristics of noise sources and their paths) and the receiving animals (hearing, motivation, experience, demography), and is therefore difficult to predict (Southall *et al*. 2007).

The activities of workers in the project area may also cause behavioral reactions by marine mammals, such as pinnipeds flushing from the jetty or pier or moving farther from the disturbance to forage. However, observations of the area show that it is unlikely that more than 10 to 20 individuals of pinnipeds would be present in the project vicinity at any one time. Therefore, even if pinnipeds were flushed from the haul-out, a stampede is very unlikely, due to the relatively low number of animals onsite. In addition, proposed mitigation and monitoring measures would minimize the startle behavior of pinnipeds and prevent the animals from flushing into the water.

The biological significance of many of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. However, the consequences of behavioral

modification could be expected to be biologically significant if the change affects growth, survival, or reproduction. Some of these types of significant behavioral modifications include: Drastic change in diving/surfacing patterns (such as those thought to be causing beaked whale strandings due to exposure to military mid-frequency tactical sonar); habitat abandonment due to loss of desirable acoustic environment; and

cessation of feeding or social interaction.

Potential Effects on Marine Mammal Habitat

The primary potential impacts to marine mammal habitat are associated with elevated sound levels produced by vibratory pile removal and pile driving in the area. However, other potential impacts to the surrounding habitat from physical disturbance are also possible.

Potential Impacts on Prey Species

With regard to fish as a prey source for cetaceans and pinnipeds, fish are known to hear and react to sounds and to use sound to communicate (Tavolga *et al*. 1981) and possibly avoid predators (Wilson and Dill 2002). Experiments have shown that fish can sense both the strength and direction of sound (Hawkins 1981). Primary factors determining whether a fish can sense a sound signal, and potentially react to it, are the frequency of the signal and the strength of the signal in relation to the natural background noise level.

The level of sound at which a fish will react or alter its behavior is usually well above the detection level. Fish have been found to react to sounds when the sound level increased to about 20 dB above the detection level of 120 dB (Ona 1988); however, the response threshold can depend on the time of year and the fish's physiological condition (Engas *et al*. 1993). In general, fish react more strongly to pulses of sound rather than non-pulse signals (such as noise from pile driving) (Blaxter *et al*. 1981), and a quicker alarm response is elicited when the sound signal intensity rises

rapidly compared to sound rising more slowly to the same level.

During the coastal construction only a small fraction of the available habitat would be ensonified at any given time. Disturbance to fish species would be short-term and fish would return to their pre-disturbance behavior once the pile driving activity ceases. Thus, the proposed construction would have little, if any, impact on the abilities of marine mammals to feed in the area where construction work is planned.

Finally, the time of the proposed construction activity would avoid the spawning season of the ESA-listed salmonid species.

Water and Sediment Quality

Short-term turbidity is a water quality effect of most in-water work, including pile driving. WSDOT must comply with state water quality standards during these operations by limiting the extent of turbidity to the immediate project area.

Roni and Weitkamp (1996) monitored water quality parameters during a pier replacement project in Manchester, Washington. The study measured water quality before, during and after pile driving. The study found that construction activity at the site had "little or no effect on dissolved oxygen, water temperature and salinity", and turbidity (measured in nephelometric turbidity units [NTU]) at all depths nearest the construction activity was typically less than 1 NTU higher than stations farther from the project area throughout construction.

Similar results were recorded during pile removal operations at two WSDOT ferry facilities. At the Friday Harbor terminal, localized turbidity levels (from three timber pile removal events) were generally less than 0.5 NTU higher than background levels and never exceeded 1 NTU. At the Eagle Harbor maintenance facility, local turbidity levels (from removal of timber and steel piles) did not exceed 0.2 NTU above background levels. In general, turbidity associated with pile

installation is localized to about a 25-foot radius around the pile (Everitt *et al*. 1980).

Cetaceans are not expected to be close enough to the Coupeville Ferry Terminal to experience turbidity, and any pinnipeds will be transiting the terminal area and could avoid localized areas of turbidity. Therefore, the impact from increased turbidity levels is expected to be discountable to marine mammals.

Passage Obstructions

Pile removal and driving at the project site will not obstruct movements of marine mammals. Construction at Coupeville will occur within 35 m of the shoreline, leaving 5.5 km of Admiralty Inlet for marine mammals to pass unaffected by construction noise.

Proposed Mitigation Measures

In order to issue an incidental take authorization under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses.

For WSDOT's proposed Coupeville Timber Towers Preservation Project, WSDOT worked with NMFS and proposed the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity. The primary purposes of these mitigation measures are to minimize sound levels from the activities, to monitor marine mammals within designated zones of influence (ZOI) corresponding to NMFS' current Level B harassment thresholds and, if marine mammals with the ZOI appear disturbed by the work activity, to initiate immediate shutdown or power down of the piling hammer, making it very unlikely potential injury or TTS to marine mammals would occur and ensuring that Level B behavioral harassment of marine mammals would

be reduced to the lowest level practicable.

Time Restriction

Work would occur only during daylight hours, when visual monitoring of marine mammals can be conducted. In addition, all in-water construction will be limited to the period between July 15, 2016, and February 15, 2017.

Underwater Noise Attenuation Device

An air bubble curtain system or other noise attenuation device would be employed during impact installation or proofing of steel piles unless the piles are driven on dry areas.

Establishment of Exclusion Zone and Level B Harassment Zones of Influence

Before the commencement of in-water pile driving activities, WSDOT would establish Level A exclusion zones and Level B zones of influence (ZOIs). The received underwater sound pressure levels (SPLs) within the exclusion zone would be 190 dB (rms) re 1 µPa and above for pinnipeds and 180 dB (rms) re 1 µPa and above for cetaceans. The Level B ZOIs would encompass areas where received underwater SPLs are higher than 160 dB (rms) and 120 dB (rms) re 1 µPa for impulse noise sources (impact pile driving) and non-impulse noise sources (vibratory pile removal), respectively.

Based on in-water measurements at the WSDOT Port Townsend Ferry Terminal (WSDOT 2011a), removal of 12-in timber piles generated 149 to 152 dB (rms) re 1 µPa with an overall average value of 150 dB (rms) re 1 µPa measured at 16 m. A worst-case noise level for vibratory removal of 12-in timber piles would be 152 dB (rms) re 1 µPa at 16 m.

Based on in-water measurements at the WSDOT Port Townsend Ferry terminal, impact pile driving of 24-in steel piles ranged from 172 to185 dB (rms) re 1 µPa measured at 10 m during the use of an air bubble curtain (WSDOT 2014a). An air bubble curtain would be used to attenuate

steel pile impact driving noise during this project. A worst-case noise level for impact driving of 24-in steel piles would be 185 dB (rms) re 1 µPa at 10 m.

Data for vibratory removal of 24-inch temporary steel piles is not available, so it is conservatively assumed to be the same as vibratory driving. Based on in-water measurements at the same location as the activity considered here (previously known as the WSDOT Keystone Ferry Terminal), vibratory driving of 24-in steel piles ranged from 164 to 176 dB (rms) re 1 µPa with an overall average value of 171 dB (rms) re 1 µPa. Distances from hydrophone to pile ranged between 6 and 11 m (WSDOT 2010a). A worst-case noise level for vibratory removal of 24-in steel piles will be 176 dB (rms) re 1 µPa at 6 m.

Using a simple practical spreading model (sound transmission loss of 4.5dB per doubling distance) to determine the distance where underwater sound will attenuate to the 120 dB (rms) re 1 µPa threshold, the ZOIs are calculated below:

- 152 dB (rms) re 1 µPa at 16 m (12-in timber vibratory pile removal): ~2.3 km/1.4 mi
- 176 dB (rms) re 1 µPa at 6 m (24-in steel vibratory pile removal): ~32 km/20 mi (land is reached at ~31 km/19 mi)

The vibratory pile removal source levels do not exceed the Level A harassment criteria.

Using 185 dB (rms) re 1 µPa at 10 m for 24-in impact pile driving and the practical spreading loss model, the distances to the thresholds are calculated:

- the 190 dB (rms) re 1 µPa pinniped Level A harassment exclusion zone is reached within 5 m/15 ft.
- the 180 dB (rms) re 1 µPa cetacean Level A harassment exclusion zone is reached within 22 m/72 ft.
- the 160 dB (rms) re 1 µPa Level B ZOI is reached within 464 m/1,523 ft.

The more conservative cetacean injury zone (22 m/72 ft.) will be used to set the 24-inch steel Zone of Exclusion (ZOE).

A summary distances and areas of the exclusion zones for Level A harassment and ZOI for Level B harassment is provide in Table 3 below.

Table 2. Distances and areas of Level A and Level B harassment zones for vibratory and impact pile driving activities

Pile Driving Method	Distance to 190 dB (m)	Distance to 180 dB (m)	Distance to 160 dB (m)	Distance to 120 dB (km)	ZOI size (km^2)
Vibratory pile removal (12-in timber)	NA	NA	NA	2.3	6.4
Vibratory pile removal (24-in steel)	NA	NA	NA	32	140
Impact driving (24-in steel pile)	5	22	464	NA	1.5

Soft Start

A "soft-start" technique is intended to allow marine mammals to vacate the area before the pile driver reaches full power. Whenever there has been downtime of 30 minutes or more without pile driving, the contractor will initiate the driving with ramp-up procedures.

For vibratory hammers, the contractor shall initiate the driving for 15 seconds at reduced energy, followed by a 1 minute waiting period. This procedure shall be repeated two additional times before continuous driving is started. This procedure shall also apply to vibratory pile removal.

For impact driving, an initial set of three strikes would be made by the hammer at 40-percent energy, followed by a 1-minute waiting period, then two subsequent three-strike sets at 40-percent energy, with 1-minute waiting periods, before initiating continuous driving.

Shutdown and Power-down Measures

WSDOT shall implement shutdown if a marine mammal is sighted within or approaching the Level A exclusion zone. In-water construction activities shall be suspended until the marine

mammal is sighted moving away from the exclusion zone, or if a large cetacean is not sighted for 30 minutes or if a small cetacean or pinniped is not sighted for 15 minutes after the shutdown.

In addition, WSDOT would implement shutdown measure when Southern Resident killer whales (as identified by Orca Network, NMFS, or other qualified source) or when humpback whales are detected or are notified by local marine mammal researchers to approach the ZOIs during pile removal and pile driving, therefore preventing Level B takes of Southern Resident killer whales and humpback whales.

If a killer whale approaches the ZOI during pile driving or removal, and it is unknown whether it is a Southern Resident killer whale or a transient killer whale, it shall be assumed to be a Southern Resident killer whale and WSDOT shall implement the shutdown measure.

Finally, WSDOT would implement shutdown or measure to prevent Level B takes when the take of any other species or stock of marine mammal is approaching the take limited authorized under the IHA (if issued).

Coordination with Local Marine Mammal Research Network

Prior to the start of daily pile driving, the Orca Network and/or Center for Whale Research would be contacted to find out the location of the nearest marine mammal sightings. Daily sightings information can be found on the Orca Network Twitter site (*https://twitter.com/orcanetwork*), which would be checked several times a day.

The Orca Sightings Network consists of a list of over 600 (and growing) residents, scientists, and government agency personnel in the U.S. and Canada. Sightings are called or emailed into the Orca Network and immediately distributed to other sighting networks including: the Northwest Fisheries Science Center of NMFS, the Center for Whale Research, Cascadia Research, the Whale Museum Hotline and the British Columbia Sightings Network.

"Sightings" information collected by the Orca Network includes detection by hydrophone. The SeaSound Remote Sensing Network is a system of interconnected hydrophones installed in the marine environment of Haro Strait (west side of San Juan Island) to study orca communication, in-water noise, bottom-fish ecology and local climatic conditions. A hydrophone at the Port Townsend Marine Science Center measures average in-water sound levels and automatically detects unusual sounds. These passive acoustic devices allow researchers to hear when different marine mammals come into the region. This acoustic network, combined with the volunteer (incidental) visual sighting network allows researchers to document presence and location of various marine mammal species.

With this level of coordination in the region of activity, WSDOT will be able to get real-time information on the presence or absence of whales before starting any pile driving.

Mitigation Conclusions

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned
- The practicability of the measure for applicant implementation.

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a

reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

(1) Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).

(2) A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to received levels of pile driving and pile removal or other activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

(3) A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to received levels of pile driving and pile removal, or other activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

(4) A reduction in the intensity of exposures (either total number or number at biologically important time or location) to received levels of pile driving, or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing the severity of harassment takes only).

(5) Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.

(6) For monitoring directly related to mitigation – an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of the applicant's proposed measures, as well as other measures

considered by NMFS, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammals species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an incidental take authorization (ITA) for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth, "requirements pertaining to the monitoring and reporting of such taking." The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area. WSDOT submitted a marine mammal monitoring plan as part of the IHA application. It can be found at *http://www.nmfs.noaa.gov/pr/permits/incidental.htm*. The plan may be modified or supplemented based on comments or new information received from the public during the public comment period.

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

(1) An increase in the probability of detecting marine mammals, both within the mitigation zone (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the analyses mentioned below;

(2) An increase in our understanding of how many marine mammals are likely to be exposed to levels of pile driving that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS;

(3) An increase in our understanding of how marine mammals respond to stimuli expected to result in take and how anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual rates of recruitment or survival) through any of the following methods:

- Behavioral observations in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
- Physiological measurements in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
- Distribution and/or abundance comparisons in times or areas with concentrated stimuli versus times or areas without stimuli;

(4) An increased knowledge of the affected species; and

(5) An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

Proposed Monitoring Measures

WSDOT shall employ NMFS-approved protected species observers (PSOs) to conduct marine mammal monitoring for its Coupeville timber towers preservation project. During pile removal and installation, land-based and vessel-based PSOs would monitor the area from the best observation points available. The number of PSOs will be based on the sizes of ensonified zones and to ensure that the entire zones are monitored.

- During 24-inch steel impact pile driving, two land-based PSOs monitors will monitor the ZOE and ZOI. Pile driving will be paused if any marine mammal

approaches the exclusion zone(s), which equate to the 22-m Level A harassment zone for those species for which take is authorized and to the larger Level B harassment zone for all other species.

- During vibratory timber pile removal, two land-based PSOs will monitor the ZOI, as shown in Figure 2 of WSDOT's Marine Mammal Monitoring Plan.
- During 24-inch vibratory pile removal, 7 land-based PSOs and one monitoring boat with a PSO and boat operator will monitor the ZOI, as shown in Figure 3 of WSDOT's Marine Mammal Monitoring Plan.
- If weather prevents safe use of the boat in the main channel of the ZOI, the boat will be used in other areas of the ZOI that are safe, such as the southwest corner of the ZOI, where lack of public access prevents stationing a land-based PSO.

The PSOs would observe and collect data on marine mammals in and around the project area for 30 minutes before, during, and for 30 minutes after all pile removal and pile installation work. If a PSO observes a marine mammal within or approaching the exclusion zone, the PSO would notify the work crew to initiate shutdown measures.

Monitoring of marine mammals around the construction site shall be conducted using high-quality binoculars (e.g., Zeiss, 10 x 42 power). To verify the required monitoring distance, the exclusion zones and ZOIs will be determined by using a range finder or hand-held global positioning system device.

During the project, in-water measurements of vibratory pile removal and driving and impact pile driving noises may be taken to determine if the vibratory ZOIs need to be modified.

Proposed Reporting Measures

WSDOT would be required to submit a final monitoring report within 90 days after

completion of the construction work or the expiration of the IHA (if issued), whichever comes earlier. This report would detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed. NMFS would have an opportunity to provide comments on the report, and if NMFS has comments, WSDOT would address the comments and submit a final report to NMFS within 30 days.

In addition, NMFS would require WSDOT to notify NMFS' Office of Protected Resources and NMFS' Stranding Network within 48 hours of sighting an injured or dead marine mammal in the vicinity of the construction site. WSDOT shall provide NMFS with the species or description of the animal(s), the condition of the animal(s) (including carcass condition, if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

In the event that WSDOT finds an injured or dead marine mammal that is not in the vicinity of the construction area, WSDOT would report the same information as listed above to NMFS as soon as operationally feasible.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, the MMPA defines "harassment" as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

As discussed above, in-water pile removal and pile driving (vibratory and impact) generate loud noises that could potentially harass marine mammals in the vicinity of WSDOT's proposed Coupeville timber tower preservation project.

As mentioned earlier in this document, currently NMFS uses 120 dB re 1 µPa and 160 dB re 1 µPa at the received levels for the onset of Level B harassment from non-impulse (vibratory pile driving and removal) and impulse sources (impact pile driving) underwater, respectively. Table 4 summarizes the current NMFS marine mammal take criteria.

Table 4. Current Acoustic Exposure Criteria for Non-explosive Sound Underwater

Criterion	Criterion Definition	Threshold
Level A Harassment (Injury)	Permanent Threshold Shift (PTS) (Any level above that which is known to cause TTS)	180 dB re 1 µPa (cetaceans) 190 dB re 1 µPa (pinnipeds) root mean square (rms)
Level B Harassment	Behavioral Disruption (for impulse noises)	160 dB re 1 µPa (rms)
Level B Harassment	Behavioral Disruption (for non-impulse noise)	120 dB re 1 µPa (rms)

As explained above, exclusion zones and ZOIs will be established that encompass the areas where received underwater sound pressure levels (SPLs) exceed the applicable thresholds for Level A and Level B harassments, respectively.

With the exception of harbor seals, Steller sea lion and harbor porpoise, it is anticipated that all of the marine mammals that enter the Level B acoustical harassment ZOIs will be exposed to pile driving and removal noise only as they are transiting the area. Only harbor seals, Steller sea lion and harbor porpoise are expected to forage and haulout in the Coupeville ZOIs with any frequency and could be exposed multiple times during a project.

As mentioned earlier, the distances to NMFS threshold for Level B (harassment) take for impact pile driving and vibratory pile removal were estimated as follows:

- *ZOI-1*: the 160 dB (rms) impact pile driving harassment threshold for 24" steel = 464 m/1,523 ft.
- *ZOI-2*: the 120 dB (rms) vibratory harassment threshold for 12-inch timber vibratory pile removal: = ~2.3 km/1.4 mi

- *ZOI-3*: the 120 dB (rms) vibratory harassment threshold for 24-inch steel vibratory pile removal: = ~32 km/20 mi (land is reached at ~31 km/19 mi)

Airborne noises can affect pinnipeds, especially resting seals hauled out on rocks or sand spits. The 90 dB (rms) re 20 µPa harbor seal threshold was estimated at 126 ft/38 m, and the 100 dB (rms) re 20 µPa sea lion threshold at 40 ft/12 m.

The closest documented harbor seal haulout is the Rat Island/Kilisut Harbor Spit haulout in Port Townsend Bay, 5.5 miles southwest. The closest documented California sea lion haulout is a channel marker buoy located off Whidbey Island's Bush Point, 9 miles south. The closest documented Steller sea lion haulout is Craven Rock haulout, east of Marrowstone Island 5.5 miles south of the ferry terminal.

In-air disturbance could therefore occur only to those pinnipeds moving on the surface through the immediate pier area, within approximately 126 ft/38 m and 40 ft/12 m of pile removal and driving. However, these individuals would also likely be exposed to underwater sound produced by the project. We do not consider potential effects from airborne noise further in this analysis.

No Level A take is expected due to implementing monitoring and mitigation measures such as installing air bubble curtain device for all impact pile driving and implementing shut-down measures for marine mammals about to enter the exclusion zones.

Incidental take for each species is estimated by determining the likelihood of a marine mammal being present within a ZOI during active pile driving or removal. Expected marine mammal presence is determined by past observations and general abundance near the project site during the construction window. Typically, potential take is estimated by multiplying the area of the ZOI by the local animal density. This provides an estimate of the number of animals that might occupy the ZOI at any given moment. The take requests were estimated using local marine mammal

data sets (e.g., The Whale Museum, Orca Network, state and federal agencies) based on observations and surveys.

The calculation for marine mammal exposures is estimated by:

Exposure estimate = N × days of pile driving/removal, where:

N = # of animals based on long-term observations by local researchers.

Specifically, daily marine mammal occurrence (N) for harbor seal, Steller sea lion, and harbor porpoise are based on the observation data from the Orca Network (WSDOT 2015). Daily marine mammal occurrence for Dall's porpoise, transient killer whale, gray whale, and minke whale are based on the observation data from the Whale Museum (WSDOT). The occurrence of the rest of the marine mammal species which do not frequently occur in the proposed project area are based on limited sighting occurrence over the years (WSDOT 2015).

Using this approach, a summary of estimated takes of marine mammals incidental to WSDOT's Coupeville Timber Towers Preservation Project are provided in Table 5.

Table 5. Estimated numbers of marine mammals that may be exposed to received noise levels that could cause Level B behavioral harassment.

Species	Estimated marine mammal takes	Abundance	Percentage
Pacific harbor seal	1,600	11,036	14.49%
California sea lion	22	296,750	0.01%
Steller sea lion	328	60,131	0.55%
Northern elephant seal	22	179,000	0.01%
Harbor porpoise	220	10,682	2.06%
Dall's porpoise	36	42,000	0.09%
Killer whale, transient	40	243	16.46%
Pacific white-sided dolphin	22	26,930	0.08%
Gray whale	12	20,990	0.06%
Minke whale	24	478	5.02%

Analysis and Preliminary Determinations

Negligible Impact

Negligible impact is "an impact resulting from the specified activity that cannot be

reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival" (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (i.e., population-level effects). An estimate of the number of Level B harassment takes, alone, is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, and effects on habitat.

WSDOT's proposed Coupeville timber tower preservation project would involve vibratory pile removal and impact and vibratory pile driving activities. Elevated underwater noises are expected to be generated as a result of these activities; however, these noises are expected to result in no mortality or Level A harassment and limited Level B harassment of marine mammals. WSDOT would employ attenuation device (e.g., air bubble curtain) during impact pile driving, thus eliminating the potential for injury (including PTS) and TTS from noise impact. For vibratory pile removal and pile driving, noise levels are not expected to reach the level that may cause TTS, injury (including PTS), or mortality to marine mammals. Therefore, NMFS does not expect that any animals would experience Level A harassment (including injury or PTS) or Level B harassment in the form of TTS from being exposed to in-water pile removal and pile driving associated with WSDOT's construction project.

Additionally, the sum of noise from WSDOT's proposed Coupeville timber tower preservation construction activities is confined to a limited area by surrounding landmasses;

therefore, the noise generated is not expected to contribute to increased ocean ambient noise. In addition, due to shallow water depths in the project area, underwater sound propagation of low-frequency sound (which is the major noise source from pile driving) is expected to be poor. Therefore, the actual ZOIs are expected to be smaller than what were modeled.

In addition, WSDOT's proposed activities are localized and of short duration. The entire project area is limited to WSDOT's Coupeville timber towers preservation construction work. The entire project duration for the construction would involve 12 hours in 8 days. These low-intensity, localized, and short-term noise exposures may cause brief startle reactions or short-term behavioral modification by the animals. These reactions and behavioral changes are expected to subside quickly when the exposures cease. Moreover, the proposed mitigation and monitoring measures are expected to reduce potential exposures and behavioral modifications even further. WSDOT would implement rigorous monitoring and mitigation measures to prevent takes of ESA-listed species such as Southern Resident killer whales and humpback whales. Additionally, no important feeding and/or reproductive areas for marine mammals are known to be near the proposed action area (Calambokidis *et al*. 2015). Therefore, the take resulting from the proposed Coupeville timber tower preservation work is not reasonably expected to, and is not reasonably likely to, adversely affect the marine mammal species or stocks through effects on annual rates of recruitment or survival.

The proposed project area is not a prime habitat for marine mammals, nor is it considered an area frequented by marine mammals. Therefore, behavioral disturbances that could result from anthropogenic noise associated with WSDOT's construction activities are expected to affect marine mammals on an infrequent and limited basis.

The project also is not expected to have significant adverse effects on affected marine

mammals' habitat, as analyzed in detail in the "**Anticipated Effects on Marine Mammal Habitat**" section. The project activities would not modify existing marine mammal habitat. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from WSDOT's Coupeville timber tower preservation project will have a negligible impact on the affected marine mammal species or stocks.

Small Number

Based on analyses provided above, it is estimated that approximately 1,600 harbor seals, 22 California sea lions, 328 Steller sea lions, 22 northern elephant seals, 220 harbor porpoises, 36 Dall's porpoises, 40 transient killer whales, 22 Pacific white-sided dolphins, 12 gray whales, and 24 minke whales could be exposed to received noise levels that could cause Level B behavioral harassment from the proposed construction work at the Coupeville Ferry Terminal in Washington State. These numbers represent approximately 0.01% to 11.9% of the populations of these species that could be affected by Level B behavioral harassment, respectively (see Table 5 above), which are small percentages relative to the total populations of the affected species or stocks.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, which are expected to reduce the number of marine mammals

potentially affected by the proposed action, NMFS preliminarily finds that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no subsistence uses of marine mammals in the proposed project area; and, thus, no subsistence uses impacted by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

The humpback whale and the Southern Resident stock of killer whale are the only marine mammal species currently listed under the ESA that could occur in the vicinity of WSDOT's proposed construction projects. WSDOT would implement rigorous monitoring and mitigation measures to prevent takes of these ESA-listed species. NMFS' Permits and Conservation Division coordinated with NMFS West Coast Regional Office (WCRO) and reviewed the WSDOT's proposed monitoring and mitigation measures and determined that with the implementation of these measures, ESA-listed species would not be affected. Therefore, WCRO concurs that section 7 consultation under the ESA is not warranted for the issuance of the IHA.

National Environmental Policy Act (NEPA)

NMFS prepared a draft Environmental Assessment (EA) for the proposed issuance of an IHA, pursuant to NEPA, to determine whether or not this proposed activity may have a significant effect on the human environment. This analysis will be completed prior to the issuance or denial of this proposed IHA.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to WSDOT

for conducting the Coupeville timber tower preservation project, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. The proposed IHA language is provided next.

1. This Authorization is valid from July 15, 2016, through July 14, 2017.

2. This Authorization is valid only for activities associated in-water construction work at the Coupeville timber tower preservation project in the State of Washington.

3. (a) The species authorized for incidental harassment takings, Level B harassment only, are: Pacific harbor seal (*Phoca vitulina richardsi*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias jubatus*), northern elephant seals (*Mirounga angustirostris*), transient killer whales (*Orcinus orca*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), gray whale (*Eschrichtius robustus*), harbor porpoise (*Phocoena phocoena*), and Dall's porpoise (*Phocoena dalli*).

(b) The authorization for taking by harassment is limited to the following acoustic sources and from the following activities:

- Impact and vibratory pile driving;
- Vibratory pile removal; and

(c) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the West Coast Administrator (206-526-6150), National Marine Fisheries Service (NMFS) and the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at (301) 427-8401, or her designee (301-427-8418).

4. The holder of this Authorization must notify the Chief of the Permits and Conservation Division, Office of Protected Resources, at least 48 hours prior to the start of activities identified in 3(b) (unless constrained by the date of issuance of this Authorization in which case notification shall

be made as soon as possible).

5. Prohibitions

(a) The taking, by incidental harassment only, is limited to the species listed under condition 3(a) above and by the numbers listed in Table 5. The taking by Level A harassment, injury or death of these species or the taking by harassment, injury or death of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this Authorization.

(b) The taking of any marine mammal is prohibited whenever the required protected species observers (PSOs), required by condition 7(a), are not present in conformance with condition 7(a) of this Authorization.

6. Mitigation

(a) Time Restriction

In-water construction work shall occur only during daylight hours, when visual monitoring of marine mammals can be conducted.

(b) Underwater Noise Attenuation Device

An air bubble curtain system or other noise attenuation device shall be employed during impact installation or proofing of steel piles unless the piles are driven on dry areas.

(c) Establishment of Exclusion Zone and Level B Harassment Zones of Influence

Before the commencement of in-water pile driving activities, WSDOT would establish Level A exclusion zones and Level B zones of influence (ZOIs).

(i) The Level A exclusion zones shall encompass areas where received underwater sound pressure levels (SPLs) are higher than 190 dB (rms) re 1 µPa for pinnipeds and 180 dB (rms) re 1 µPa for cetaceans.

(ii) The Level B ZOIs shall encompass areas where received underwater SPLs are higher than 160 dB (rms) and 120 dB (rms) re 1 µPa for impulse noise sources (impact pile driving) and non-impulses noise sources (vibratory pile removal), respectively.

(iii) The exclusion zones and ZOIs shall be established based on modeled calculation listed in Table 4, and maybe adjusted based on sound source verification (SSV) measurements during test pile driving.

(d) Monitoring of marine mammals shall take place starting 30 minutes before pile driving begins until 30 minutes after pile driving ends.

(e) Soft Start

(i) When there has been downtime of 30 minutes or more without pile driving, the contractor will initiate the driving with ramp-up procedures described below.

(ii) For vibratory hammers, the contractor shall initiate the driving for 15 seconds at reduced energy, followed by a 1 minute waiting period. This procedure shall be repeated two additional times before continuous driving is started. This procedure shall also apply to vibratory pile removal.

(iii) For impact driving, an initial set of three strikes would be made by the hammer at 40-percent energy, followed by a 1-minute waiting period, then two subsequent three-strike sets at 40-percent energy, with 1-minute waiting periods, before initiating continuous driving.

(f) Shutdown Measures

(i) WSDOT shall implement shutdown measures if a marine mammal is sighted within or approaching the Level A exclusion zone. In-water construction activities shall be suspended until the marine mammal is sighted moving away from the exclusion zone, or if a large cetacean is not sighted for 30 minutes or if a small cetacean or pinniped is not sighted for 15 minutes after the

shutdown.

(ii) In addition, WSDOT would implement shutdown measures when Southern Resident killer whales (as identified by Orca Network, NMFS, or other qualified source) or when humpback whales are detected to approach the ZOIs during pile removal and pile driving, therefore preventing Level B takes of Southern Resident killer whales and humpback whales.

(iii) If a killer whale approaches the ZOI during pile driving or removal, and it is unknown whether it is a Southern Resident killer whale or a transient killer whale, it shall be assumed to be a Southern Resident killer whale and WSDOT shall implement the shutdown measure.

(iv) WSDOT shall implement shutdown or power-down measures to prevent Level B takes when the take of any other species or stock of marine mammal is approaching the take limited authorized under this authorization.

(v) WSDOT shall implement shutdown measures if marine mammals with the ZOI appear disturbed by the work activity.

(g) Coordination with Local Marine Mammal Research Network

Prior to the start of daily pile driving, WSDOT will contact the Orca Network and/or Center for Whale Research to get real-time information on the presence or absence of whales before starting any pile driving.

7. Monitoring:

(a) Protected Species Observers

WSDOT shall employ NMFS-approved PSOs to conduct marine mammal monitoring for its construction project.

(i) Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance. Use of

binoculars will be required to correctly identify the target.

(ii) Experience or training in the field identification of marine mammals (cetaceans and pinnipeds).

(iii) Sufficient training, orientation or experience with the construction operation to provide for personal safety during observations.

(iv) Ability to communicate orally, by radio or in person, with project personnel to provide real time information on marine mammals observed in the area as necessary.

(v) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).

(vi) Writing skills sufficient to prepare a report of observations that would include such information as the number and type of marine mammals observed; the behavior of marine mammals in the project area during construction, dates and times when observations were conducted; dates and times when in-water construction activities were conducted; and dates and times when marine mammals were present at or within the defined ZOI.

(b) Monitoring Protocols: PSOs shall be present on site at all times during pile removal and driving.

(i) A range finder or hand-held global positioning system device will be used to ensure that the Level A exclusion zones and Level B behavioral harassment ZOIs are monitored.

(ii) A 30-minute pre-construction marine mammal monitoring will be required before the first pile driving or pile removal of the day. A 30-minute post-construction marine mammal monitoring will be required after the last pile driving or pile removal of the day. If the constructors take a break between subsequent pile driving or pile removal for more than 30 minutes, then additional pre-construction marine mammal monitoring will be required before the next start-up of

pile driving or pile removal.

(iii) Marine mammal visual monitoring will be conducted for different ZOIs based on different sizes of piles being driven or removed.

(A) During 24-inch steel impact pile driving, two land-based PSOs monitors will monitor the ZOE and ZOI. Pile driving will be paused if any marine mammal approaches the exclusion zone.

(B) During vibratory timber pile removal, two land-based PSOs will monitor the ZOI.

(C) During 24-inch vibratory pile removal, 7 land-based PSOs and one monitoring boat with a PSO and boat operator will monitor the ZOI.

(D) If weather prevents safe use of the boat in the main channel of the ZOI, the boat will be used in other areas of the ZOI that are safe, such as the southwest corner of the ZOI, where lack of public access prevents stationing a land-based PSO.

(iv) If marine mammals are observed, the following information will be documented:

(A) Species of observed marine mammals;

(B) Number of observed marine mammal individuals;

(C) Behavior of observed marine mammals;

(D) Location within the ZOI; and

(E) Animals' reaction (if any) to pile-driving activities

8. Reporting:

(a) WSDOT shall provide NMFS with a draft monitoring report within 90 days of the conclusion of the construction work or within 90 days of the expiration of the IHA, whichever comes first. This report shall detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed.

(b) If comments are received from the NMFS West Coast Regional Administrator or NMFS Office of Protected Resources on the draft report, a final report shall be submitted to NMFS within 30 days thereafter. If no comments are received from NMFS, the draft report will be considered to be the final report.

(c) In the unanticipated event that the construction activities clearly cause the take of a marine mammal in a manner prohibited by this Authorization (if issued), such as an injury, serious injury, or mortality, WSDOT shall immediately cease all operations and immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. The report must include the following information:

(i) Time, date, and location (latitude/longitude) of the incident;

(ii) Description of the incident;

(iii) Status of all sound source use in the 24 hours preceding the incident;

(iv) Environmental conditions (e.g., wind speed and direction, sea state, cloud cover, visibility, and water depth);

(v) Description of marine mammal observations in the 24 hours preceding the incident;

(vi) Species identification or description of the animal(s) involved;

(vii) The fate of the animal(s); and

(viii) Photographs or video footage of the animal (if equipment is available).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with WSDOT to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. WSDOT may not resume their activities until notified by NMFS via letter, email, or telephone.

(E) In the event that WSDOT discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), WSDOT will immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators. The report must include the same information identified above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with WSDOT to determine whether modifications in the activities are appropriate.

(F) In the event that WSDOT discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), WSDOT shall report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinators, within 24 hours of the discovery. WSDOT shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. WSDOT can continue its operations under such a case.

9. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein or if NMFS determines that the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals, or if there is an unmitigable adverse impact on the availability of such species or stocks for subsistence uses.

10. A copy of this Authorization must be in the possession of each contractor who performs the construction work at the Coupeville Ferry Terminal.

Dated: January 14, 2016.

Perry Gayaldo,
Deputy Director,
Office of Protected Resources,
National Marine Fisheries Service.

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